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DEPARTMENT OF THE ARMY, TULSA DISTRICT **TD 02215**
U.S.ARMY CORPS OF ENGINEERS **DEC 96**
JSH

TULSA DISTRICT GUIDE SPECIFICATION

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SECTION 02215

PLASTIC FILTER CLOTH

1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designations only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS:

ASTM D 123	(1995a) Definitions of Terms Relating to Textiles
ASTM D 4354	(1989; R-1994) Standard Practice for Sampling of Geosynthetics for Testing
ASTM D 4355	(1992) Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
ASTM D 4491	(1992) Standard Test Methods for Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991) Standard Test Method for Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991) Standard Test Method for Grab Break Load and Elongation of Geotextiles
ASTM D 4751	(1993) Standard Test Method for Determining Apparent Opening Size of a Geotextile
ASTM D 4759	(1988; R-1992) Standard Practice for Determining the Specification Performance of Geosynthetics
ASTM D 4833	(1988) Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

1.2 MEASUREMENT AND PAYMENT

Plastic filter cloth shall be measured for payment by the square feet meters in place. Overlap joints and seams shall be measured as a single layer of cloth. Payment will be made at the contract Unit Price for "Plastic Filter

Cloth" which price shall include shipping, handling, storage, protection, fabrication, securing pins, installation and all other costs incidental to construction of cloth.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL DESCRIPTIONS:

SD-13 Certificates

Plastic Filter Cloth; [ ].

Prior to the delivery of geotextile, certificate of compliance shall be submitted certifying that geotextile meets the requirements specified.

SD-14 Sample

Plastic Filter Cloth; [ ].

Sample of geotextile, if required by the Contracting Officer.

1.4 SHIPMENT AND STORAGE

During shipment and storage, the cloth shall be protected form direct sunlight, ultra-violet rays, temperatures greater that 140 degrees, mud, dirt, dust, and debris. The the maximum extent possible, the cloth shall be maintained wrapped in heavy duty protective covering.

1.5 ACCEPTANCE REQUIREMENTS

geotextile fabric and seams shall be accepted on the following basis. The Contractor shall furnish the Contracting Officer, in duplicate, a mill certificate or affidavit signed by an official from the company manufacturing the geotextile. The mill certificate or affidavit shall state the full product name by trademark and style number, shall indicate the geotextile polymer type(s), and shall attest that the geotextile meets the chemical, physical, and specified requirements. If requested by the Contracting Officer, the Contractor shall provide geotextile samples for testing to determine compliance. When samples are requested, they shall be submitted a minimum of 60 days prior to the beginning of installation of the geotextile. Samples shall be from the same production lot as will be supplied for installation. Samples shall be identified by manufacturers lot designation and the product machine direction. The machine direction is defined as the roll length direction. Sampling for testing shall be in accordance with ASTM D 4354, and testing procedures shall be in accordance with the methods given in Table 1. Acceptance/rejection of geotextiles shall be determined in accordance with ASTM D 4759.

2 PRODUCTS

2.1 MATERIALS

Physical properties of fabric and seams shall conform to reqirements shown in TABLE 1.

2.1.1 Plastic Filter Fabric

The geotextile shall be of nonwoven needle punched construction and consist of long-chain polymer fibers composed of at least 85% by weight of polypropylenes. Fabric shall be free of defects including rips, holes, flaws, deterioration, or damage. The fabric shall be inert to chemicals commonly found in soil. The fibers shall be oriented into a multi-directional stable network whereby they retain their positions relative with each other. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile.

2.1.2 Seams

The seams of the geotextile shall be sewn with thread of a material meeting the chemical requirements given above for geotextile yarn. The sheets of geotextile shall be attached at the factory or another approved location, if necessary, to form sections not less than 12 feet 3.65 meters wide. When used, sewn geotextile seams shall consist of a minimum of one row of stitching. The seam and stitch type used to perform the sewing shall be as recommended by the manufacturer of the geotextile.

2.1.3 Securing Pins

Securing pins shall be of the size and type recommended by the manufacturer and fabricated with a head to retain a steel washer having an outside diameter of not less than 1.5 inches 40 mm.

3 EXECUTION

3.1 INSTALLATION

The geotextile shall be placed in the manner and at the locations shown on the drawings. The surface to receive the geotextile shall be prepared to a relatively smooth condition free of obstructions, depressions, debris and soft or low density pockets of material. Erosion features such as rills, gullies, etc. shall be graded out of the surface before geotextile placement. The geotextile shall be placed with the long dimension perpendicular to the slope. The geotextile shall be laid smooth and free of tension, stress, folds, wrinkles, or creases. The strips shall be placed to provide a minimum width of 24 inches 600 mm of overlap for each joint. Temporary pinning of the textile to help hold it in place until the bedding layer is placed shall be allowed. The temporary pins shall be removed as the bedding is placed to relieve high tensile stress which may occur during placement of material on the geotextile.
The geotextile shall be protected at all times during construction from contamination by surface runoff and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Any damage to the geotextile during its installation or during placement of bedding or riprap shall be replaced. Covering of the geotextile with bedding shall be within 7 calendar days after placement of the geotextile. Failure to comply shall require replacement of geotextile. Before placement of riprap or other bedding materials, the Contractor shall demonstrate that the placement technique will prevent damage to the geotextile. In no case shall any type of equipment be allowed on the unprotected geotextile.

TABLE 1
PHYSICAL PROPERTIES (1)

PROPERTY	TEST PROCEDURE (ASTM)	ACCEPTABLE RESULTS
Grab Tensile Strength, lbs mm	ASTM D 4632	200 900 minimum

Elongation, %	ASTM D 4632	65 maximum
Seam Strength, lbs mm	ASTM D 4632	160 700 minimum
Puncture Strength, lbs mm	ASTM D 4833	75 300 minimum
Trapezoid Tear Strength, lbs mm	ASTM D 4533	90 400 minimum
Apparent Opening Size (AOS/US Standard Sieve)	ASTM D 4751	
a) Soil with 50% less by weight passing US No. 200 sieve		<0.6mm/#30
b) Soil with more than 50% by weight passing US No. 200 sieve		<0.297mm/#50
Ultraviolet Degradation	ASTM D 4355	70% Strength retained (At 150 hours)

(1) Minimum - Use value in weaker principal direction. All numerical values represent minimum average roll value (i.e., test results from any sampled roll in a lot shall meet or exceed the minimum values).

Ultra-violet resistance of the fabric shall provide strength retention of not less the 60 percent of the original test strength after 500 hours of testing in accordance with ASTM D 4355.

3.2 REPAIR

Geotextile repair shall be in accordance with manufacturer's recommendations.

--End of Section--